

*Sensitiveness and Responsiveness.*

Animals and plants do not live in self-contained independence : to exist they must draw food from their environment and avoid being eaten by others. They must, then, possess some means of communication with their surroundings, and this is provided by their senses. By sight, touch, smell, taste, and hearing, animals can discover their food material and perceive their enemies. Plants obviously possess some sensory powers : they are affected by light and colour : some of them are very sensitive to touch : in absorbing food material their roots appear to exercise some measure of selection. Our senses give us only symbolic impressions of the things around us, and leave us in ignorance of their real nature. We have, as it were, to imagine the machinery of a musical box from the tones and intervals of the music it plays to us. But our symbolic impressions suffice for our animal needs, although they fail altogether to satisfy our philosophic curiosity.

To be of practical utility sensation must be followed by muscular reaction : the sight of food must involve its seizure. Experiment seems to have established that every sensation excites instinctive action, and is followed by some movement—too slight it may be to be noticed by consciousness, but capable of being detected by elaborate appliances for measurement. Where conduct is governed simply and uniformly by

directive instinct, movements that respond to sensation ordinarily develop into definite action : the mouth secretes its saliva immediately it is touched by food; the behaviour of insects approaches the automatic. In the external conduct of the higher animals, as we ascend the scale of animal life, directive instinct gradually surrenders some of its authority to inference from